IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jason Charles PELLY et al.

U.S. Serial No.:   Filed Concurrently Herewith

Title of Invention: MODIFYING MATERIAL

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PRELIMINARY AMENDMENT

U.S. Patent and Trademark Office
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Sir:

Before the issuance of the first Office Action, please amend the above-identified application as follows:

IN THE CLAIMS:

Cancel claim 89 without prejudice.

Amend claims 16, 26, 36, 59, 69 and 77 to read as follows:

16.   (Amended) A method according to claim 15, wherein if a representation of value N1 is to be changed by an amount X, it is transposed with another member of value N2, where

|N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number RN1 where the proportion P equals a value L/M where L represents a predetermined, selected, level and M equals the maximum allowable value of L wherein the bit map stores one or more values of the level L.

26. (Amended) A method according to claim 24, of removing modifications that had been applied to information signals representing material by determining whether one or more transpositions of the representations of the group exist which do not increase the number of entropy encoded bits and selecting the, or one of the, trasposed groups or the untransposed group in accordance with the value of a pseudo random number.

36. (Amended) A method according to claim 35, wherein if a representation of value N1 is to be changed by an amount X, it is transposed with another member of value N2, where |N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number RN1 where the proportion P equals a value L/M where L represents a predetermined, selected, level and M equals the maximum allowable value of L wherein the bit map stores one or more values of L.

59. (Amended) Apparatus according to claim 58, wherein if a representation of value N1 is to be changed by an amount X, it is transposed with another member of value N2, where |N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number RN1 where the proportion P equals a value L/M where L represents a predetermined, selected, level and M equals the maximum allowable value of L wherein the bit map stores one or more values of the level L.

69.   (Amended) Apparatus according to claim 66 for removing modifications that had been applied, wherein the inverse change processor is operable to define, for each modified representation, a set of representations of similar magnitude of which that representation is a member, and a member of a set to be restored to its unmodified value is changed by pseudo randomly transposing that member with another member of the set in accordance with the inverse of the said predetermined transposition algorithm.

77.   (Amended) Apparatus according to claim 76, wherein if a representation of value N1 is to be changed by an amount X, it is transposed with another member of value N2, where $|N1-N2| = X$, and X is a pseudo random value selected according to the invertible algorithm, and X is dependent on a proportion P, where $0<=P<=1$, of the value of a pseudo random number RN1 where the proportion P equals a value L/M where L represents a predetermined, selected, level and M equals the maximum allowable value of L wherein the bit map stores one or more values of L.

REMARKS

The claims have been amended to eliminate multiple dependencies. The filing fee is based upon this Preliminary Amendment. Attached hereto is a marked version of the changes made to the claims 16, 26, 36, 59, 69 and 77. The attached pages are captioned **"Version with markings to show changes made."**

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

16.   (Amended) A method according to claim 15, <u>wherein if a representation of value N1 is to</u>

<u>be changed by an amount X, it is transposed with another member of value N2, where</u>

<u>|N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and</u>

<u>X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number</u>

<u>RN1 where the proportion P equals a value L/M where L represents a predetermined, selected,</u>

<u>level and M equals the maximum allowable value of L</u> ~~when directly or indirectly dependent on~~

~~claim 9,~~ wherein the bit map stores one or more values of the level L.

26.   (Amended) A method according to claim 24, of removing modifications <u>that had been</u>

applied to information signals representing material by ~~the method of claim 5, the method~~

~~comprising~~ determining whether one or more transpositions of the representations of the group

exist which do not increase the number of entropy encoded bits and selecting the, or one of the,

trasposed groups or the untransposed group in accordance with the value of a pseudo random

number.

36.   (Amended) A method according to claim 35, <u>wherein if a representation of value N1 is to</u>

<u>be changed by an amount X, it is transposed with another member of value N2, where</u>

<u>|N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and</u>

<u>X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number</u>

<u>RN1 where the proportion P equals a value L/M where L represents a predetermined, selected,</u>

<u>level and M equals the maximum allowable value of L</u> ~~when directly or on claim 31,~~ wherein the

bit map stores one or more values of L.

59.   (Amended) Apparatus according to claim 58, <u>wherein if a representation of value N1 is to be changed by an amount X, it is transposed with another member of value N2, where |N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number RN1 where the proportion P equals a value L/M where L represents a predetermined, selected, level and M equals the maximum allowable value of L</u> ~~when directly or indirectly dependent on claim 52,~~ <u>wherein the bit map stores one or more values of the level L.</u>

69.   (Amended) Apparatus according to claim 66 for removing modifications <u>that had been</u> applied<u>,</u> ~~by the apparatus of claim 9~~ wherein the inverse change processor is operable to define, for each modified representation, a set of representations of similar magnitude of which that representation is a member, and a member of a set to be restored to its unmodified value is changed by pseudo randomly transposing that member with another member of the set in accordance with the inverse of the said predetermined transposition algorithm.

77.   (Amended) Apparatus according to claim 76<u>, wherein if a representation of value N1 is to be changed by an amount X, it is transposed with another member of value N2, where |N1-N2| = X, and X is a pseudo random value selected according to the invertible algorithm, and X is dependent on a proportion P, where 0<=P<=1, of the value of a pseudo random number RN1 where the proportion P equals a value L/M where L represents a predetermined, selected, level and M equals the maximum allowable value of L</u> ~~when dependent on claim 72,~~ wherein the bit map stores one or more values of L.